UNITED STATES PATENT OFFICE.

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BOX SPANNER AND THE LIKE.

1,419,222.


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To all whom it may concern: Be it known that we, IRVINE CHADDETON and RONALD CRIGHTON BOOTH, both subjects of the King of Great Britain and Ireland, residing at Ashton-under-Lyne and Failsworth, England, respectively, have invented new and useful Improvements in or Relating to Box Spanners and the like, of which the following is a specification.

This invention refers to box spanners as used for tightening, loosening or adjusting bolts and nuts and the like and its object is to provide a construction of box spanner which will allow of being adjusted at one or both ends to suit a variety of sizes of bolts and nuts or the like, thus dispensing with the need for a set or series of different sizes of box spanners as hitherto provided.

According to the invention, the improved spanner is provided with two segmental jaw members adapted to engage and grip a bolt head or nut and fitted coaxially within the tube of the spanner, that part of the tube to which the jaw members are fitted being inclined relatively to the longitudinal axis of the tube and the jaw members being bevelled on the face which lies next the inclined sides of the tube, so that with any longitudinal adjustment of the jaw members relatively to the tube, they, the jaw members separate or converge and thereby adapt themselves to varying sizes of bolts and nuts, means such as slots and screws being provided to fractionally and adjustable hold the jaw members to the tube, and means such as a pin on one jaw member slidably engaging a hole in the other jaw member serving to cause the said members to move together when being adjusted.

Upon the accompanying drawings:-

Fig. 1 illustrates in perspective, one example of the improved box spanner, with the jaw members adjusted to suit the largest size of nut that such spanner will take.

Fig. 2 illustrates a geometric side exterior elevation and

Fig. 3 a longitudinal sectional elevation of the same spanner, but in this figure the jaw members are shown adjusted to the smallest size of nut that such spanner will take.

Fig. 4 illustrates a plan or top end view of the improved spanner.

Figs. 5 and 6 illustrate side view and face view respectively of one of the jaw members, and

Figs. 7 and 8 illustrate like views respectively of the other jaw member, separate from the spanner.

In carrying out the invention in one convenient manner, the tube a near one end is pinched or flattened transversely and that part of the tube between the flattened portion and the near end of the tube is made rectangular in cross section, see Figure 4. Further, the two sides b', b' of such part of the tube are inclined in opposite directions, thereby producing a wedge-like space or bore within the tube end. Within said space are fitted two substantially half-wedge shaped metal blocks c', c' which on one face are adapted to lie against the inclined sides b', b' of the tube, and on the face furthest from such inclined sides are each formed with a recess c' suitable for engaging a portion of a nut or bolt head. The two blocks constitute the aforesaid gripping jaws. In each of the inclined parts b', b' of the tube is a slot d' and extending through such slots and into the respective blocks c', c' are screws e, e by which and spring washers e', the blocks are movable to and fro and held in any desired position within the limits of the slots.

Secured to one of said blocks is a pin f' and in the other block is a hole f into which the pin projects, the purpose of the pin and hole being to cause both blocks c', c' to move as one when adjusted, and thus ensure the recesses c' of the nut head always lying in the same plane.

By moving the blocks c', c' in and out, sliding them to and fro along the inclined faces of the tube, they are thus readily adapted for gripping any one of a series of different sizes of nuts or bolt heads and when so adjusted allow of the nut or bolt head being rotated, in like manner to a non-adjustable box spanner.

The opposite faces of the blocks below the recesses c' are preferably each formed with a groove c' to allow room for a bolt to lie in when projecting beyond the nut requiring to be gripped by the jaws c', c'. The sides of the recesses c' may be slightly under-
cut, see Figure 3, and/or they may be serrated to ensure of a firm grip. The recesses are shaped in plan to suit the shape of the object to be gripped. In the example shown (see Figure 4) the recesses are shaped to suit hexagon nuts, but the same jaws can be used for square nuts.

The round end of the tube a is formed with the usual holes a' for enabling a "tommy" to be used in rotating the spanner.

What we claim is:

1. A box spanner comprising a tube having a part near one end of less diameter than the other parts and that part of the tube between the portion of small diameter and the near end of the tube being rectangular in cross section and two opposite sides of such part being inclined and having slots, a pair of half-wedge shaped metal blocks within said tube and each lying against one of the inclined faces of the tube, screws passing through the slots and engaging the blocks, and spring washers for yieldingly and adjustably holding the blocks in various positions along the inclined sides of the tube, said blocks being recessed at one end to receive and engage a nut or bolt head or the like, and one of said blocks having a pin and the other a hole which the pin slidably fits, substantially as herein set forth.

2. A box spanner comprising a tube having a part near one end of less diameter than the other parts and that part of the tube between the portion of small diameter and the near end of the tube being rectangular in cross section and two opposite sides of such part being inclined and having slots, a pair of half-wedge shaped metal blocks within said tube and each lying against one of the inclined faces of the tube, screws passing through the slots and engaging the blocks, and spring washers for yieldingly and adjustably holding the blocks in various positions along the inclined sides of the tube, said blocks being recessed at one end to receive and engage a nut or bolt head or the like, the walls of said recesses being undercut and the opposite faces of the blocks below the recesses having grooves, substantially as herein set forth.

In testimony whereof we have signed our names to this specification.

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